

REMARKS

Claims 1-26 are currently pending in the application. By this amendment, claim 18 is amended for the Examiner's consideration. Support for this amendment is provided in at least Figures 1A to 2B and related text of the present specification. No new matter is added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

35 U.S.C. § 112 Rejection

Claim 18 is rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

Applicants respectfully submit that amended claim 18 is in full compliance with 35 U.S.C. § 112, second paragraph. More specifically, the "and prime the reactor" was added to claim 18 to provide proper antecedent basis for "the primed reactor." This amendment is not intended to narrow the original scope of claim 18 and is not provided to overcome any prior art references.

Accordingly, Applicants respectfully request that the rejection over claim 18 be withdrawn.

35 U.S.C. § 102 Rejection

Claims 1-7, 9, 11, 13-14, 16-20, and 22-26 were rejected under 35 U.S.C. § 102(e) for being anticipated by U.S. Patent No. 6,444,037 issued to Frankel, *et al.* ("Frankel"). This rejection is respectfully traversed.

First, the Examiner does not give patentable weight to various elements and limitations in the rejection of claims 1-7 and 9. More specifically, the Examiner alleges:

no patentable weight is given to ... 'the substance balances receipt of a to-be-controlled material' . . . because a recitation of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior. (Office Action at 3.)

In contradistinction to these assertions, Applicants respectfully direct the Examiner to the following:

The subject matter of a properly construed claim is defined by the terms that limit its scope. It is this subject matter that must be examined. As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim: (A) statements of intended use or filed of use, (B) "adapted to" or "adapted for" clauses, (C) "wherein" clauses, or (D) "whereby" clauses.

See Manual of Patent Examining Procedure (MPEP) § 2106 (8th Ed., Rev. Feb. 2003)(emphasis added).

In view of the foregoing and contrary to the Examiner's assertions, the combination of various elements recited in claims 1-7 and 9, do not include intended use recitations as these claims do not use language that suggests or makes optional. Thus, this claim language should be given patentable weight.

For example, claim 1 recites "the substance balances receipt of a to-be controlled substance." This language clearly should be provided patentable weight since this feature is not optional. Also, this feature clearly requires a certain structure to perform this feature, i.e., a substance incorporated in the first material. For example and illustration purposes only, in paragraph number [0036] of the specification a to-be controlled substance may comprise an etching material. This etching material is incorporated into the first material in order to minimize etch-stop.

Moreover, the claim language does not tend to raise a question of whether the language is limiting. The Examiner is respectfully directed to the examples A-D of MPEP § 2106. None of those terms outlining specific language which would raise a question of the limiting effect of the language are present in claim 1. Therefore, the Examiner is respectfully requested to examine

the subject matter as required by the MPEP as claims 1-7 and 9 include language that when properly construed should be given patentable weight.

Claims 1-7, 9, and 11

In any event, the Examiner asserts that Frankel is capable of performing the alleged intended use and meets the claim. Applicants respectfully submit Frankel is not capable of performing the features of the invention. That is, Frankel cannot balance receipt of a to-be controlled material.

More specifically, claim 1 recites a combination of elements, including, for example:

A semiconductor production reactor comprising . . . at least one interior chamber surface comprising a first material and a substance incorporated in the first material, the substance balances receipt of a to-be-controlled material.

Frankel does not teach at least these features.

Frankel is directed towards a chamber liner for a high temperature processing chamber. In the rejection, the Examiner correctly asserted Frankel discloses that the chamber is cleaned with a chamber cleaning procedure. (Office Action at 3.) More specifically, Frankel discloses cleaning the chamber to eliminate deposition process residues such as undesired oxides and/or nitrides from portions of chamber 15, including the unlined chamber walls. *See* col. 54, lines 26-30.

Plasma processes are used in the cleaning step and NF₃ gas is used in the generation of the plasma etchant. But the plasma processes is not a substance incorporated in the first material, where the substance balances receipt of a to-be-controlled material (e.g., etching material). This is simply not taught by Frankel. Rather, Frankel merely discloses plasma etching of the chamber to remove residues prior to operation of the apparatus.

Accordingly, Applicants respectfully submit that claim 1 and claims 2-7, 9, and 11, which depend from claim 1, are allowable.

Claims 13-14 and 16-17

Claim 13 recites a combination of elements including, for example:

incorporating a substance in the first material of the interior surface of the reactor chamber, the substance comprising a seasoning element or compound containing seasoning atoms or molecules that when combined with the chamber surface and/or a material to be used in the reactor chamber are relatively less volatile than a combination, alone without the seasoning atoms or molecules, of the chamber surface and the material to be used in the reactor chamber.

Frankel does not teach at least these features. Rather, as discussed above, Frankel is directed towards a plasma etch treatment prior to the operation of the chamber. Frankel removes residues formed on the chamber interior surface and does not add material to produce a less volatile combination. *See col. 54-55.* Claim 13, on the other hand, requires seasoning atoms or molecules combined with a material to produce a less volatile combination than without atoms or molecules.

Accordingly, Applicants respectfully submit that claim 13 and claims 14 and 16-17, which depend from claim 13, are allowable.

Claims 18-20 and 22-23

Claim 18 recites a combination of elements including, for example:

providing a reactor chamber having at least one interior surface comprising a first material; incorporating a substance in the first material of the interior surface of the reactor to minimize an undesirable reaction at the surface and prime the reactor

Frankel does not teach at least these features. Rather, as discussed above Frankel is directed towards a plasma etch treatment prior to the operation of the chamber. That is, Frankel does not teach incorporating a substance in the first material of the interior surface to minimize an undesirable reactor. Frankel only uses a plasma etch.

Accordingly, Applicants respectfully submit that claim 18 and claims 19-20 and 22-23, which depend from claim 18, are allowable.

Claims 24-26

Claim 24 recites a combination of elements including, for example:

incorporating a substance in a first material of an interior surface of the reaction chamber, the substance comprising seasoning atoms or molecules that reduce the formation of volatile compounds and complexes when fluorine encounters the surface; and

conducting a production process in the reactor in which fluorine is present in the reaction chamber.

Frankel does not teach at least these features. Rather, as discussed above, Frankel is directed towards a plasma etch treatment prior to the operation of the chamber. Claim 24 requires seasoning atoms or molecules that reduce the formation of volatile compounds and complexes when fluorine encounters the surface. Again Frankel removes residues and does not teach seasoning atoms incorporated onto a first material of an interior surface of the reaction chamber.

Accordingly, Applicants respectfully submit that claim 24 and claims 25-26, which depend from claim 24, are allowable.

35 U.S.C. § 103 Rejection

Claim 8 was rejected under 35 U.S.C. §103(a) for being unpatentable over U.S. Patent No. 6,444,037 issued to Frankel in view of U.S. Patent No. 6,508,911 issued to Han, *et al.* (“Han”) Claims 10, 12, 15, and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Frankel in view of U.S. Patent No. 5,997,685 issued to Radhamohan, *et al.*, (“Radhamohan”). These rejections are respectfully traversed.

Claim 8

Claim 8 depends from claim 1 and includes all of the limitations of claim 1 by virtue of its dependency. Frankel fails to teach or suggest all of the limitations of claim 1 for reasons as discussed above with regard to claim 1. Han fails to cure the deficiencies of Frankel. That is, Han does not teach or suggest, having a “first material and a substance incorporated in the first

material, the substance balances receipt of a to-be-controlled material” as required by claim 1. Rather, Han is directed to a corrosion resistant coating. More specifically, Han discloses coating an alumina dome of a plasma reactor with a relatively thick layer of diamond to increase a resistance to corrosion from a high-density plasma.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103.

Claims 10, 12, 15, and 21

Claims 10 and 12 depend from claim 1 and include all of the limitations of claim 1 by virtue of its dependency. Frankel fails to teach or suggest all of the limitations of claim 1 for reasons as discussed above with regard to claim 1. Radhamohan fails to cure the deficiencies of Frankel. That is, Radhamohan does not teach or suggest, having a “first material and a substance incorporated in the first material, the substance balances receipt of a to-be-controlled material” as required by claim 1. Rather, Radhamohan is directed towards a corrosion resistant coating. That is, Radhamohan is directed towards a corrosion-resistant apparatus. More specifically, Radhamohan teaches corrosion resistant alloys that may contain additional elements.

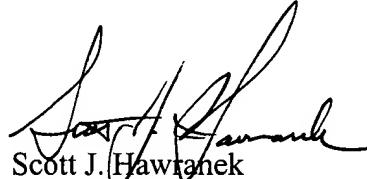
Claims 15 and 21 depend from claim 13 and include all of the limitations of claim 13 by virtue of their dependencies. Frankel fails to teach or suggest all of the limitations for reasons as discussed above with regard to claim 13. Radhamohan fails to cure the deficiencies of Frankel. That is, Radhamohan does not teach or suggest, seasoning atoms or molecules combined with a material to produce a less volatile combination than without atoms or molecules as required by claim 13.

Accordingly, Applicants respectfully request that the rejection under 35. U.S.C. § 103 over claims 10, 12, 15, and 21 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 09-0456.

Respectfully submitted,



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